



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

A house-to-house survey of the village of East Youngstown was made by one of the company's officials with the village health officer, and all suspicious eye cases were sent to the hospital.

Placards in English and a number of foreign languages, telling of the danger of eye diseases, were posted throughout the mill and village.

Living conditions in boarding houses were investigated and suggestions made to remedy those found to be bad.

Where it was found necessary to operate to relieve sufferers this was done by the specialist.

The hospital was open from February 9 to August 31, 1914, and during most of this time the services of a nurse of the Blind Commission of the State of Ohio was furnished gratuitously. During the time the hospital was in use 242 patients were treated, 187 of these being employed by the company. Sixty-two cases were in quarantine, eight of which were of outside patients. Thirteen thousand one hundred and eighty-three treatments were given. While the hospital is nominally closed, trachoma patients are still being treated, there being nine at this time. The specialist makes the diagnosis and the nurse of the Ohio Blind Commission, who is still on duty, gives treatment.

On March 1, 1914, the company employed a surgeon on full time, who now has an assistant.

Physical examination of all persons applying for work is being made.

A health board for the village has been appointed, the company's chief surgeon being one of the board.

Arrangements have about been completed by the village for a good water supply.

The partly completed sewerage system has been finished. Insanitary privies are being abated under the direction of the health board.

A garbage collection and disposal system has been installed.

An attempt is being made to regulate overcrowding of lodging and boarding houses.

Streets are rapidly being graded and paved.

A physician has been appointed village health officer.

Thus it can be seen that most of Dr. Schereschewsky's recommendations affecting the village have been carried out, or work is being done to this end.

INTERSTATE MIGRATION OF TUBERCULOUS PERSONS.

ITS BEARING ON THE PUBLIC HEALTH WITH REFERENCE TO THE STATE OF CALIFORNIA.

By P. M. CARRINGTON, Surgeon, United States Public Health Service.

Under dates of October 30 and December 24, 1913, the writer was detailed by the Surgeon General, United States Public Health Service, to make an investigation in southern California of the influence of the

migration of tuberculous persons to that section from other sections of the country to determine—

1. The extent and direction of such migration.
2. The effects of travel on tuberculous persons themselves.
3. The bearing of the migration of tuberculous persons on the health of other travelers and on employees of common carriers.
4. The conditions under which tuberculous persons live in localities resorted to for change of climate and the effects of these conditions on the progress of their disease.
5. The bearing of the presence of tuberculous persons on the health, social, and economic status of communities to which they have migrated in search of health.

During the progress of the investigation, which was continued from October 30, 1913, to June 30, 1914, observations were made on the transcontinental trains, at the various terminal stations visited, and opportunity was taken to converse with travelers, Pullman and railway conductors and physicians in the various localities visited, railway officials, and citizens interested in the tuberculosis problem. Every tuberculosis sanitarium in California south of San Francisco, with two exceptions, was visited, and the views of practically all the physicians in that region who are particularly interested in tuberculosis were obtained.

The only previous work of this character, so far as the writer is aware, was done by the California State Tuberculosis Commission, and was based largely upon a study of mortality statistics. It seemed necessary that data relating to living cases should be obtained and studied before attempting to form conclusions. The complete report of the above-named commission has not yet been published, but a preliminary abstract of its final report was published in the January (1913) Bulletin of the California State Board of Health.

It was recognized that statistics on the various points covered by this investigation were not to be had in any completeness. Therefore arrangements were made, as far as possible in the comparatively limited time to be devoted to the investigation, to collect data on living cases bearing on the five heads covered by the investigation.

Although tuberculosis is a reportable disease in the State of California, only a minority of physicians are in the habit of reporting their cases, and those who do report them do not include in their reports information on all the points necessary for the purposes of the investigation. Arrangements were therefore made with a number of physicians and institutions to collect information regarding cases under treatment. It seemed also desirable that a survey should be made of some community to which tuberculous persons resort, such survey to be used in computing probable averages.

Survey of Redlands.

The town of Redlands, with a population of about 10,000, was selected for this work, mainly because of the intelligent and enthusiastic cooperation of Dr. Gayle G. Mosely, of that place, who did much of the work personally and by his influence with the local physicians secured full and accurate reports of all existing cases under medical care. By authority of the bureau, a visiting nurse was employed, a canvass of the town made, and many of the cases not under the care of any physician were thus found and tabulated. These latter cases in Redlands amounted to about 15 per cent of the total, and it is probably a fair index of the number of cases throughout southern California not under medical supervision.

As a result of the Redlands survey there were found 241 cases, giving a morbidity rate of 24 per 1,000 population. Almost 70 per cent of these cases were migratory and a little more than 6 per cent native Californians. The indigent tuberculous were found to comprise 12.86 per cent of the total and 18.56 per cent of the migratory cases. The death rate from tuberculosis in Redlands appears to be progressively decreasing, the figures being 30.9 per cent, 30.4 per cent, and 28 per cent, respectively, for the years 1911, 1912, and 1913.

The town of Redlands has long been a favorite resort for consumptives. It contains no "slums," properly speaking, and even the poorer class of consumptives live under very favorable conditions as regards housing, ventilation, and sunlight. All dwellings are detached and nearly all have sleeping porches. Notwithstanding these favorable conditions, nearly 40 per cent of the migratory cases have grown worse. This is not surprising when it is noted that only about 18 per cent of the migratory cases come in the early stages of the disease.

Information regarding 907 cases was obtained from physicians and sanatoria in various parts of southern California. The list includes 286 cases in the Barlow Sanatorium, the Los Angeles city and county hospitals, the San Bernardino County Hospital, and the San Diego County Hospital. These institutions receive no patients, except under extraordinary circumstances, who are not citizens of the State; that is, who have not been in the State one year or longer, a fact which makes their statistics relative to length of residence and migration less reliable than statistics gathered from other sources. This has a bearing on the estimated averages, and will be alluded to later. Accepting the information obtained from these institutions, however, as giving fairly accurate averages throughout, it is found that 233, or nearly 26 per cent, have migrated to the State within the past 12 months; that 450, or almost 50 per cent, are migratory within the meaning of this investigation; but the percentage of indigency shown in this

table would be somewhat more than one-third, which is not a fair average because this series includes cases in the city and county hospitals in persons who are all indigent.

Data concerning 178 cases were furnished by Dr. M. S. Iseman, of Los Angeles, Cal. All of these cases came under observation between January 1 and May 1, 1914. Of this number, 58 gave a length of residence in California of one year or less and 95 were migratory. In addition to the above, Dr. George E. Tucker, county health officer of Riverside County, reports 200 cases, of which 74 were migratory.

The tuberculosis problem in California, so far as this investigation is concerned, is practically confined to the counties of Los Angeles, San Bernardino, Riverside, San Diego, and Imperial, to which we will add Ventura, Santa Barbara, and Orange in order to utilize the statistics of the State board of health, these being the counties composing the geographic division of "southern California," as used by the State board.

In the year 1913, 2,384 deaths from tuberculosis were recorded in this division, of which 1,636 occurred in Los Angeles County and 748 in the other seven counties of the district. If we accept the ratio of 10 living cases to every death, the ratio proposed by Hoffman at the ninth meeting of the National Association for the Study and Prevention of Tuberculosis, this would give us 23,820 cases in southern California and 16,360 in the county of Los Angeles. In the town of Redlands, in 1913, 42 deaths from tuberculosis were recorded, which, according to the above ratio, should give us 420 cases in Redlands, whereas our survey discovered but 241. The Redlands survey shows that the above ratio is too large for southern California, due probably to the large number of far-advanced cases coming into southern California and dying within the year.

Sixteen deaths in Redlands occurred in residents of less than one year's standing; the remainder, 26 cases, multiplied by 10, gives us 260 cases as the probable number which should exist in Redlands. Assuming that our survey failed to discover 18 existing cases would prove this proportion to be correct.

In the geographic division of southern California, 17.8 per cent of deaths from tuberculosis occurred within one year after arrival in the State. In Los Angeles County this percentage was 16.9 per cent and in the other counties of the division 19.9 per cent. Substituting 17.8 per cent, or 424 cases, from the total tuberculosis death rate for southern California, there remain 1,958 deaths among individuals of more than one year's residence. This figure multiplied by 10 gives 19,580 cases as the probable number in the district, and judging by the estimates of county health officers and others this is a conservative estimate.

Extent and Direction of the Migration of Tuberculous Persons from Other Parts of the Country into Southern California.

In the course of this investigation observations were made by the writer during actual travel on railroads, and information was sought from railway officials and employees, including conductors, porters, brakemen, and depot masters.

Arrangements were also made with the Santa Fe Railway Co. and the Pullman Co. to have reports made by their conductors of all those passengers traveling in California who apparently were suffering with tuberculosis. These reports were instituted by the Santa Fe Co. about January 1, 1914, and by the Pullman Co. about March 1, 1914, and continued until June 1, a period during which, according to the railway authorities, fewer consumptive persons travel than during the fall months. It was, of course, recognized that conductors would detect only those consumptives in a very advanced stage of the disease. Railway officials and conductors, as well as physicians, agree that the number of advanced cases of tuberculosis entering California at present is materially less than in former years.

Out of 195 cases observed by Pullman and train conductors, 64 were traveling into California from other States, 33 and 9 gave Los Angeles and San Diego, respectively, as their destination. Forty-three of the cases were reported as leaving California for the East, 10 of whom were en route to Phoenix, and 9 to various other Arizona resorts. The remaining cases, 88 in number, were traveling within the State of California or altogether outside of the State.

One conductor on a train running daily from Sacramento south informed the writer that his train averaged 50 to 60 consumptives every month. This particular train connects at Sacramento with trains from the East and the States of Washington and Oregon.

As stated previously, the tuberculosis problem, so far as the migration of tuberculous persons from other States into California is concerned, is practically confined to the counties of Los Angeles, San Bernardino, Riverside, San Diego, and Imperial. It is estimated that 90 per cent of such individuals are ticketed first to Los Angeles; about 50 per cent of these, after variable (usually brief) periods of residence in Los Angeles, migrate to the resorts in the foothills within a radius of 75 miles. A few go to San Diego, another small percentage to Imperial County, and perhaps 25 per cent to the Arizona resorts, chiefly Phoenix, and many of these alternate between Arizona and southern California, according to the season. According to the personal observations of the writer, every trans-continental train brings into California at least one consumptive. If this observation is correct, and is a condition which prevails throughout the year, the number of consumptives coming to California from other States would be between 4,000 and 4,500 annually.

Out of 2,220 cases studied, 400 are known to have come to California within the past 12 months. In the series of 907 cases, 450, or almost 50 per cent, admit having migrated because of tuberculosis, but this percentage is believed to be low because of the inclusion in this series of 286 patients from several eleemosynary institutions who would be apt to conceal brief residence and the fact of migration on account of tuberculosis, because such admissions would affect their eligibility for treatment in these institutions.

Dr. C. C. Browning, of Los Angeles, who furnished a series of 680 cases, is of the opinion that at least 60 per cent of his cases, and probably 75 per cent, developed the disease before coming to California.

Reference is made elsewhere to estimates given of the number of consumptives in southern California. If these estimates be correct, and if the same percentages prevail as found to prevail in cases actually studied, 60 per cent, we must conclude that there are now in southern California 11,748 cases which have migrated from other States because of tuberculosis; 60 per cent is adopted as a compromise between the 50 per cent, 60 per cent, and probably 75 per cent of the several series of cases. Medical opinion places this percentage higher.

That many tuberculous persons who do not know of their infection travel, is certain, and is exemplified by the experience of Dr. George E. Tucker, of Riverside, who, during an examination of 1,000 presumably healthy laborers applying for employment at the Riverside Cement Works, found more than 20 cases of tuberculosis.

The Effects of Travel on Tuberculous Persons Themselves.

In order to secure information upon this point many consumptives were interviewed. Pullman conductors were requested to report the apparent effect of travel upon such consumptives as came under their observation, and 195 tuberculous travelers were reported on by conductors. In a large majority of these cases the conductor either reported that the passengers stood the journey well or were not affected. In a few instances the passenger was reported greatly fatigued, very weak, or seemingly improved. Several died en route, and a few were reported as suffering material inconvenience when high altitudes were reached. Of 450 migratory consumptives from whom information was obtained, 72 are said to have been improved, and 74 made worse by the journey West, while in 261 cases no effect was observed.

The Bearing of the Migration of Tuberculous Persons on the Health of Other Travelers and the Employees of Common Carriers.

The method and source of infection in tuberculosis are not well understood, nor do we know exactly how the bacilli find entrance into the human body in particular instances, but we do know that the

bacilli are so very generally distributed in most communities that many human beings are infected in childhood and that the danger of infection is in direct proportion to the length and intimacy of exposure.

Dr. John C. King, of Banning, in an article read before the Pacific Association of Railway Surgeons in San Francisco in 1912, says:

Tuberculosis is ubiquitous, therefore railroad employees suffer from it. The percentage of morbidity is probably less among them than among any other large mass of employees, except those in the Army and Navy.

In attempting to group the men we find that engineers and firemen are quite exempt from the disease. On the other hand, Pullman conductors furnish a large quota.

In the course of these investigations the writer has encountered but one Pullman conductor suffering from tuberculosis. Diligent inquiry among a large number of Pullman conductors and porters elicited reports that three or four in each class were said to have had tuberculosis. The Pullman Co. was unable to furnish any data along these lines, but the following statistics supplied by the general manager of the Santa Fe Railway Co. seem to show that the incidence of tuberculosis among trainmen and conductors in the passenger service is relatively very small. The other railway companies had no statistics of sufficient accuracy to have any decided bearing on the question, except that in a general way they show that relatively few of their employees outside the office force are known to develop tuberculosis.

Number of consumptives among the various classes of employees of the Santa Fe Railway Co. during the last five years.

	In service.	Tuberculosis.		In service.	Tuberculosis.
Conductors.....	383	1	General office employees.....	861	11
Brakemen.....	384	18	Bridge and building employees	974	12
Engineers.....	463	4	Signal department employees.	288	2
Firemen.....	476	6	Marine service employees.....	116	
Switchmen.....	385	4	Store department employees..	602	1
Shop employees.....	3,144	27	Construction department employees.....	196	
Station employees.....	2,049	15	Total.....	14,687	153
Section employees ¹	4,166	52			

¹ These are largely Mexicans who come to the Santa Fe through the El Paso gateway.

These figures show a morbidity rate of a little over 1 per cent.

Among 178 cases occurring in the practice of Dr. M. S. Iseman, of Los Angeles, it was found that while a great variety of trades, callings, and professions are represented in this series, there are included but seven railway employees, not one of whom is in the class which would come in contact with the traveling public.

Under the regulations of the Pullman Co., conductors are forbidden to resell a berth which has been occupied by a sick passenger until

the car has been disinfected. Cases of sickness, especially supposed tuberculosis, are reported by the conductor to the district superintendent at the termination of his run. The entire car is then subjected to disinfection and cleaning identical with that described by Passed Assist. Surg. A. D. Foster, in Public Health Reports for March 27, 1914. This process will not be again described here, but the procedures used are probably efficient, at least so far as making the cars safe for subsequent travelers is concerned. All Pullman cars, without reference to the character of passengers carried, undergo these processes at intervals.

The disinfection and cleaning of coaches of the Santa Fe Railway Co. is practiced in very much the same manner, and in addition the Santa Fe Co. provides cuspidors partially filled with a phenol solution in all smoking and parlor cars, and all of the roads entering California now provide individual drinking cups, either without charge or at a nominal cost.

Dr. Charles B. Dudley, in a paper on "The Dissemination of Tuberculosis as Affected by Railway Travel" several years ago, seemed to show that both the morbidity and mortality from tuberculosis were less among passenger-train employees than among any other group of employees in the whole service of the Pennsylvania Co.

In view of such available data as have been collected the conclusion seems proper that the temporary association of the well with the migrating tuberculous person, such as occurs in railway travel, is not attended by any considerable measure of danger of the transmission of the disease. It is to be noted also as a common experience of railway and Pullman conductors that the average consumptive who travels at the present time is much more careful in his personal habits and the disposal of his sputum than was customary with such travelers several years ago. There is much greater danger of the spread of influenza and common colds, as well as other diseases which are more readily communicable.

The Conditions under which Tuberculous Persons Live in Localities Resorted to for Changes of Climate, and the Effects of these Conditions on the Progress of Their Disease.

These were investigated through physicians in the various localities visited and by personal visits to a considerable number of consumptives.

The conditions under which consumptives live resolve themselves largely into a question of finances. The better or more expensive class of tourist hotels claim that they do not receive consumptives, but wealthy consumptives may be found in all of them. In many communities there is a violent prejudice against consumptives, and in at least one community visited there is a local law which forbids

the renting of a house by or to a consumptive without the full knowledge and consent of the owner thereof. In this community recently damages were recovered by the owner of a house which had been rented to a consumptive by a real estate agent without the owner's consent.

The poorer consumptives who come to Los Angeles naturally seek the low-priced hotels and lodging houses in the congested area almost in the heart of the city, and it is this section which furnishes a large majority of the cases treated by the Tuberculosis Society, as well as a large percentage of those cases which find their way to the city and county hospital.

This hospital is intended only for legal residents of the State, although a great many nonresidents are admitted for humanitarian reasons, and one case is reported in which the patient's baggage was checked from New York City direct to the City and County Hospital. The city maintains but one visiting tuberculosis nurse, who visits as many of the reported cases as possible and, where there is overcrowding or other insanitary condition in the home, arranges for the removal of such families to more suitable dwellings.

Many of the more prosperous live in furnished apartments, a style of dwelling which has come into very general vogue within the past few years on the Pacific coast and is a sort of compromise dwelling resembling somewhat the hotel and somewhat the apartment houses of the East. These apartment houses are very numerous, and when occupied by careless consumptives, not under medical supervision and unknown to the health department, may become a serious menace to healthy persons who subsequently occupy the same apartment. The very general use of the vacuum cleaner probably obviates a considerable part of the danger which would otherwise exist in these apartments.

Speaking of the poorer class of consumptives in Los Angeles, in an article on "The Tuberculosis Problem in Los Angeles," several years ago, Dr. George H. Kress says:

Forced by the lack of material means to seek lodging in the cheapest rooming houses; unable to purchase nourishing food, without which even the best climate on earth is of but little avail; forced, when their material means are not so limited to conceal the nature of their malady from the keeper of the rooming house, lest they be requested to go elsewhere for lodging; eating in the public restaurants among the better class of which even the cleansing of dishes is not any too well performed and where among the cheapest this work is decidedly neglected; the lot of these hopelessly advanced victims of consumption is, indeed, hard. Their sufferings terminate somewhat when, bedridden, they are admitted to the county hospital where, even though the white-capped nurses be strangers, they may spend a few hours of peace before death.

* * * * *

One hundred and eighteen deaths from consumption in the Los Angeles County Hospital last year; 34 deaths in rooms and lodging houses, without a physician in

attendance, so that a coroner's inquest was necessary. The Associated Charities yearly provide transportation to an additional hundred or so of consumptive persons to enable them to return to their homes because they are unable to keep up the struggle here.

Dr. Kress further states that 25 per cent of the mortality and 50 per cent of the morbidity from consumption in Los Angeles is to be found in the lodging and rooming houses, which harbor only about 30 per cent of the population of the city. An effort of the Los Angeles Tuberculosis Society to increase the number of municipal visiting nurses so that there shall be one nurse for each 100 reported cases in the city of Los Angeles, having been recently rejected by the city council, is now being made the subject of an initiative petition to be voted on at the next election.

Those consumptives who are fortunate enough to be able to resort to the foothill towns, whether they enter the various sanatoria or occupy hired houses, live under very nearly ideal conditions as regards housing. The effect of these conditions, however, on the progress of their disease depends very largely upon the state of the disease when they arrive. Out of the 450 migrating cases included in Table 2, 102 were good or incipient; 211 were fair or moderately advanced; and 134 were poor or far advanced; no record, 3. Their condition of health now is as follows: Good, 56; improved, 215; worse, 160; no record, 19. These figures are not conclusive and may even be misleading, for the reason that nearly all of these patients are still under treatment and many of those unimproved or worse when these observations were made may be greatly improved, arrested, or cured within the next 12 months. An unknown percentage will doubtless have died within the same period.

Very far advanced cases probably do little if any better than they would have done in their own homes, and those who are financially unable to supply themselves with suitable dwellings and the comforts not to say the luxuries of life had far better have remained in their homes where they might at least have had the ministry and companionship of friends and relatives in their last hours. The earlier cases, in a climate which permits out of door life practically every day in the year, probably improve in somewhat greater percentage than in the less favored climates of the East, and in every community in southern California we find large numbers of arrested and cured consumptives in every walk of life.

The Bearing of the Presence of Tuberculous Persons on the Health, Social, and Economic Status of Communities to Which they have Migrated in Search of Health.

Under this heading statistical data are practically impossible of attainment at the present time, but much information bearing on these points was furnished by prominent physicians, particularly of Los Angeles and adjoining communities.

In order to get estimates, a circular letter containing the 10 questions given below was addressed to the county health officers of each of the 27 counties in California south of San Francisco. A second request was sent to some who failed to reply to the first, and finally some sort of reply was received from 17.

In addition to the county health officers this letter was sent to a number of city health officers and prominent physicians in the various towns in the territory referred to:

1. Population?
2. Cases of tuberculosis reported in 1913?
3. Cases of tuberculosis in the county now estimated?
4. Percentage of migrating cases?
5. Percentage of indigency among migrating cases?
6. Percentage improved since arrival?
7. Whether or not tuberculosis is increasing among residents of the county?
8. Precautions taken to prevent the spread of the disease?
9. Annual expense to the county for care of indigent and nonresident consumptives?
10. Annual expense for return to their homes of such consumptives?

Ten of these county health officers replied to question 7 in the negative, four in the positive, and three were noncommittal. Five city health officers and physicians answered the same question in the negative, one thinks it is decreasing, three replied in the affirmative, and three were noncommittal.

A number of well-informed and close-observing physicians in Los Angeles think the disease is undoubtedly more prevalent there at the present time than formerly, and conditions certainly are favorable to its spread, especially in the cheap hotel and lodging-house section of the city, which is also the most congested area.

The first and most important cause of this condition lies in the inability of the health department to gain a knowledge of the existence and location of cases. Much has been said about the negligence of physicians in reporting cases, and unfortunately many are culpable in this regard; but there remains the fact that a considerable number of tuberculous persons live, suffer, infect their surroundings, and die without having come under the care of physicians at all. Dr. Kress, in the paper previously quoted, refers to 34 deaths in one year in rooms and lodging houses without a physician in attendance, so that a coroner's inquest was necessary. A condition similar to that existing in Los Angeles exists in less degree in the other towns of southern California.

Dr. George E. Tucker, county health officer of Riverside County, in a recent letter says:

The occurrence of the disease among the native born is increasing and increasing rapidly, and figures to prove this statement are obtainable from the State statistician, Mr. Leslie, at Sacramento. I personally believe that the problem in California is to a great extent a house problem. In Los Angeles, as in Riverside, a majority of cases which come from other States, sooner or later, because of lack of funds, are forced to take quarters in houses where the sleeping rooms are poorly ventilated, where there is insufficient sunlight, and where the bedding, beds, rugs or carpets, and furniture

are highly contaminated as a result of the careless expectoration of large quantities of infected sputum. The bedclothing in these cheap rooming houses, hotels, and tenement houses is only replaced at long intervals, and the rooms are occupied practically all the time, with a very frequent change of tenants.

It is a matter of common knowledge that many of the physicians of southern California migrated to the State on account of tuberculosis, and the same observation is true, though perhaps to less extent, in other professions and callings. Dr. Norman Bridge, of Los Angeles, said to the writer recently: "I could march down Spring Street a regiment of men and women prominent in the social, professional, and business life of Los Angeles who have come here because they themselves or some member of their families had tuberculosis." He then related instance after instance of individuals, prominent socially and financially, who would be included in his regiment. Another prominent physician, himself a recovered consumptive, makes a similar statement, and pages of like testimony might be presented.

San Diego was formerly a more favored resort for consumptives than at present, and in connection with this section of the subject the following tables, showing total deaths, deaths from consumption, and percentage of deaths from consumption, from 1870 to 1884, and from 1908 to 1913, inclusive, are interesting.

The first of these tables has been compiled from an interesting record kept by the only firm of undertakers in San Diego during the years covered; the second is supplied by Health Officer Mead.

Year.	Total deaths.	Deaths from consumption.	Percentage.	Year.	Total deaths.	Deaths from consumption.	Percentage.
1870.....	21	3	14	1878.....	40	8	20
1871.....	58	20	34	1879.....	56	13	23
1872.....	42	16	38	1880.....	67	19	28
1873.....	64	17	26	1881.....	121	24	20
1874.....	54	19	35	1882.....	83	17	20
1875.....	63	20	31	1883.....	76	24	31
1876.....	64	24	37.5	1884.....	84	22	26
1877.....	42	15	35				

The causes of death are not always given, and such expressions as "Killed by Indian," "Loss of breath," "Shot by Dodson," and the like, are not infrequent. But the table shows that the relative number of deaths from tuberculosis was very high during these years, when many far-advanced consumptives migrated from the East to San Diego.

Year.	Total deaths.	Deaths from tuberculosis.	Percentage.	Year.	Total deaths.	Deaths from tuberculosis.	Percentage.
1908.....	715	97	13.5	1911.....	814	122	15
1909.....	600	86	14.3	1912.....	966	156	16
1910.....	685	107	15.6	1913.....	1,032	159	15.4

41 per cent residential, 59 per cent nonresidential cases.

The reputation of southern California as a resort for consumptives is said to have originated during the gold rush of 1849, when whole families migrated from the Eastern States across the plains, in some instances bringing with them the bedridden consumptive member of the family. Numbers of these started out in the prairie schooner, and, in the open-air life of the plains, living out of doors 24 hours each day, began to improve, and in many instances, after a few weeks of travel, began to be able to walk short and then increasing distances daily. Many such, by the time their destination was reached, had materially improved, and in the continued outdoor life of California went on to recovery.

The news of these recoveries gradually drifted eastward, giving to the Southwest and to southern California the reputation of being particularly beneficial to consumptives, and so the tide of consumptive emigration began to flow designedly to the Southwest. Many came and some recovered; Dr. John C. King, of Banning, says about one-third. And these recovered consumptives have built many of the towns of southern California. The town of Banning has grown around Dr. John C. King, who, because of tuberculosis, migrated to the Southwest in 1884, having been impressed with the climatic advantages of that region by a friend who had recovered his health there. In a recent visit to Banning the writer was driven through the town, a place now of about 1,500 people, and practically all the best houses in town were pointed out by Dr. King, with the remark in each case, "This was built by a consumptive."

The cost of indigent, nonresident consumptives to the communities of southern California has been very difficult to arrive at with any degree of accuracy. No such records are kept. An individual becomes a citizen of California, if he or she so elects, by reason of one year's residence without regard to his or her health. For the purpose of computing this cost, however, an effort was made to ascertain how many consumptives who are now public charges had developed tuberculosis before entering the State. This has been an extremely difficult matter, for the reason that only citizens are eligible for treatment in the county hospitals. That is to say, no consumptive is received under ordinary circumstances who has been in the State less than one year. The statement of the patient is usually the only evidence on which to determine the period of residence, and it is probable that many, in their dire extremity, falsify in this regard in order to obtain admission to the various county hospitals. But from the stage of the disease when admitted, the character of the disease, and other factors we may form some estimate of the percentage of indigent consumptives who are migratory within the meaning of this report.

The Los Angeles City and County Hospital cares for a daily average of approximately 200 consumptives at a cost of about \$1 per diem per patient. Dr. Whitman, the superintendent of the hospital, was unwilling to commit himself, but agreed that an estimate of \$150 daily average would be conservative. Since we are dealing in estimates, however, we will reduce this to \$100 per diem, an annual cost to the city and county of Los Angeles for the care and treatment of indigent nonresident consumptives of \$36,500. To this must be added the sum of \$2,101.51 expended by the county during the year 1913 for returning indigent consumptives to their former homes. This expenditure of \$38,601.51 represents the taxes on approximately \$2,000,000 of property, and takes no account of expenditures of organized and private charities, and is only overhead expense, including nothing for organization, interest on investment, etc.

Against this showing one physician in Los Angeles related to the writer histories of a half dozen or more families in his practice who had come to Los Angeles County because of tuberculosis, bringing with them large wealth and developing local real estate from insignificant valuations to valuations running well up toward the million-dollar mark. All this, of course, is estimate, based, however, on intimate knowledge on the part of the physician.

From the experience related by this and other physicians in Los Angeles, there seems no doubt that persons who have come to that city because of tuberculosis have brought and developed taxable wealth many times in excess of \$2,000,000. The same conditions prevail relatively in all sections to which migrating consumptives come, but Los Angeles is cited as an example because it bears the brunt of the problem, bearing a large share of the expense of caring for the indigent, and receiving a large share of the benefit accruing from the migration of the well-to-do consumptive.

While occasionally a small community may find itself overburdened in attempting to care for the indigent, nonresident consumptive, it is believed that southern California as a whole can well afford to care for those who need assistance in view of the benefits it has derived in the past, is deriving now, and will derive in the future, from well-to-do, well-educated, refined, and altogether desirable families with consumptive members who come to southern California to reside.

There is a widespread feeling that some measures should be taken to restrict the migration of consumptive people who have not sufficient means to provide for their own necessities, but this feeling, amongst the medical profession at least, is based not upon economic but rather humanitarian grounds.

Forced or Assisted Migration.

It has been possible to secure very little definite information in respect to forced or assisted migration. Even patients who seek public charity for their maintenance or to enable them to return to their homes, are reluctant to admit that they were assisted in coming to California. Six out of 241 cases in the city of Redlands acknowledged such assistance. Forty-five consumptive individuals and families were returned to their homes by the Los Angeles authorities during 1913, at an expense of \$2,101.51, a special rate being given by the railroads in such cases. Some of these are known to have been sent to California at the expense of organized charities. None are known to have been sent by any governmental authority.

The board of supervisors of San Diego County furnished transportation to 82 individuals during 1913, but only 2 or 3 per cent were furnished transportation on account of sickness.

It is the practice of boards of supervisors in southern California to furnish transportation home to indigent consumptives only in case they have assurances that the patients will be cared for on arrival at destination by friends and relatives, or, in case the patient is able to work, of his being promised a situation. Notwithstanding these statements, it is more than probable that boards of supervisors may be influenced to some extent by a willingness to be rid of the burden of caring for such people.

Summary and Conclusions.

1. The migration of tuberculous persons in advanced stages of the disease into southern California, while still large, amounting probably to from 2,000 to 4,000 annually, is decreasing, due probably to the teaching of recent years, the establishment of sanatoria throughout the East, the successful treatment of tuberculosis in the home environment, and the less widely held belief in the climatic treatment of tuberculosis. It is impossible from existing data to state with any accuracy the number of incipient cases that travel across the borders of the State.

2. The immediate effects of travel upon tuberculous persons are usually adverse, but its influence on the course of the disease is not great, unless the patients be in extremis.

3. The migration of tuberculous persons has probably little bearing on the health of other travelers and of employees of common carriers.

4. The conditions under which tuberculous persons live in the localities resorted to for changes of climate, and the effects of these conditions on the progress of their disease, depend very largely on the question of finances, influenced by education and previous habits, and whether or not the patient has had and continues to have wise medical advice. Wise medical advice would retain in their home sur-

roundings far advanced and hopeless cases. Early cases, well-advised and financially independent, recover in large percentages.

5. The bearing of the presence of tuberculous persons on the social and economic status of communities to which they have migrated in search of health, has been in the main as applied to southern California, beneficial. Many communities in southern California have been built by migrating consumptives. Many important enterprises have originated with them, and even the great city of Los Angeles, now claiming a population of more than a half million, had its beginning in this way and still receives many well-to-do, desirable, tuberculous citizens from other States.

In many of the smaller communities where sanatoria for the treatment of tuberculosis are located, the health of the community has been either not affected or improved. Dr. Peers, of Colfax, says:

My own experience would seem to indicate that the health of a community is raised if the locality is the home of an active sanitarian and the people are of sufficient intelligence to heed his teachings. I am sure our local institution has been a wonderful power for good in the education regarding proper living among our own townspeople.

In those communities to which large numbers of far-advanced and hopeless consumptives resort without means to supply their necessities the public health has suffered. It is the indigent consumptive who is the most dangerous, because he is, as a rule, less well instructed, more careless in his personal habits, and necessarily resides in the cheap rooming and lodging houses in the congested areas.

6. That there is some forced or assisted migration is unquestioned, but so far as this investigation has developed, those indigent consumptives who are sent to California by public or private charities are, for the most part, so assisted for purely humanitarian reasons and well-meaning, though ill-advised, charity.

In reaching the foregoing conclusions, Drs. Gayle G. Moseley, of Redlands; Robert A. Peers, of Colfax; George H. Evans, Philip King Brown, and Max Rothschilds, of San Francisco; Pottenger, Kress, Browning, Malmsberry, Barlow, and Bridge, of Los Angeles; and B. F. Howard, secretary of the State tuberculosis bureau, have been consulted.

Acknowledgments.

The writer has received advice and assistance from so great a number of the members of the medical profession and others in California that to mention their names individually is impracticable. But he feels that he can not close this report without specially mentioning and expressing appreciation for the material assistance, advice, and information given by Drs. Gayle G. Moseley, of Redlands, and C. C. Browning and F. M. Pottenger, of Los Angeles, who gave freely of their time for pure love of the cause—the prevention of tuberculosis.